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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,574	11/21/2003	Jae-Hyeong Kim	1293.1983	9399

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EXAMINER

RODRIGUEZ, GLENDA P

ART UNIT

PAPER NUMBER

2651

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/717,574

Applicant(s)

KIM, JAE-HYEONG

Examiner

Glenda P. Rodriguez

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-7 and 9-22 is/are rejected.
- 7) ☒ Claim(s) 3 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/21/03 04/07/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 6, 11, 15, 16, 18, 19 and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Melrose et al. (US Patent No. 6, 975, 468).

Regarding Claim 1, Melrose et al. teach a method of switching heads in a hard disk drive, the method comprising:

Calculating deviations between a reference head and each of the heads (Col. 5, L. 6-22, wherein Melrose et al. teaches writing deviation (or off-track) are calculated and recorded into a table);

Generating a mapping table, elements of which are deviations between the reference head and each of the heads, and storing the mapping table in a memory;

Switching a head in operation to a head associated with a track or sector requested to be accessed (Col. 5, L. 6-22 and L. 33-43);

Applying a deviation of the switched head, which is recorded in a mapping table, to the virtual track or the sector on which the switched head is positioned, to obtain the physical track or the sector of the track on which the switched head is positioned (Col. 5, L. 6-22 and L. 33-43); and

Accessing the track or the sector to be accessed based on the obtained physical track or sector address (Col. 5, L. 6-22 and L. 33-43, in which Melrose et al. teaches that within each track per zone has a predetermined deviation (or off-track value)).

Method claims (6, 11 and 15) are drawn to the method of using the corresponding method claimed in claim (1). Therefore method claims (6, 11 and 15) correspond to apparatus claim (1) and are rejected for the same reasons of anticipation as used above.

Apparatus claims (18) are drawn to the apparatus corresponding to the method of using same as claimed in claims (1, 11 and 15). Therefore apparatus claim (18) corresponds to method claims (1, 11 and 15), and are rejected for the same reasons of anticipation as used above.

Regarding Claim 4 and 9, Melrose et al. teaches all the limitations of Claim 1 and 6, respectively. Melrose et al. further teaches wherein further comprising defining an available data zone (Col. 5, L. 33-43).

Regarding Claims 5 and 10, Melrose et al. teaches all the limitations of Claim 4. Melrose et al. further teaches wherein the available data zone ranges from the first track from the outer boundary of a disk accessed by the reference head to the last track at the inner boundary of a disk accessed by a head having the greatest physical address deviation (See Col. 5, L. 33-43, wherein Melrose et al. teaches that it is done for each zone.).

Regarding Claims 16 and 19, Melrose et al. teach all the limitations of Claims 15 and 18, respectively. Melrose et al. further teaches wherein calculating physical track addresses includes obtaining the physical track address of the disk on which a head is positioned to access by

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applying a track address deviation of the disk stored in the memory to a virtual track address of the disk (See Col. 5, L. 6-20 and L. 33-43).

Regarding Claim 20, Melrose et al. teach all the limitations of Claim 18. Melrose et al. further teach wherein the controller is a digital signal processor, a microprocessor, or a microcontroller (See Element 28).

Regarding Claim 21, Melrose et al. teach all the limitations of Claim 18. Melrose et al. further teach wherein the controller supplies a control signal to the read/write channel to read data from, or write data to, the disk in the disk drive (Col. 4, L. 29-38).

Regarding Claim 22, Melrose et al. teach all the limitations of Claim 18. Melrose et al. further teach wherein the host interface includes a buffer memory and a control circuit interacting with a computer (Col. 4, L. 29-38).

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 7, 12-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melrose et al. in view of Ueda et al. (US Patent No. 5, 969, 895).

Regarding Claims 2, 7, and 13, Melrose et al. teaches all the limitations of Claim 1. However, Melrose et al. does not explicitly teach wherein the reference head is the head having a

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physical address whose absolute value is the least among read physical addresses of tracks or sectors on which the heads of a head assembly are positioned. Ueda et al. teaches this limitation in Fig. 5, wherein Head 0 (reference head) has the least absolute value. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Melrose et al.'s invention in order to efficiently switch heads in a disk drive according to the Abstract of Ueda et al.

Regarding Claim 12, Melrose et al. teaches all the limitations of Claim 11. However, Melrose et al. does not teach wherein the arbitrary locations are over milled areas of corresponding disk surfaces. This limitation is taught by Ueda et al. in Figs. 5 and 8 of Ueda et al. along with its Description.

Regarding Claim 14, Melrose et al. teaches all the limitations of Claim 11. However, Melrose et al. does not teach wherein the setting the deviation of the reference head as a zero value is by adding an identical constant to the physical track addresses accessed by the respective, individual heads. This limitation is taught by Ueda et al. in Fig. 5.

Regarding Claim 17, Melrose et al. teaches all the limitations of Claim 16. However, Melrose et al. does not explicitly teach wherein the virtual track address of the disk is the substantially equal to the virtual track address of a reference disk. This limitation is taught by Ueda et al. in Fig. 5, wherein the track deviation of head 0 is substantially equal from the virtual to the physical track.

***Allowable Subject Matter***

5. Claims 3 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Their reasons for allowable subject matter are in the previous Office Action dated 08/16/05.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new grounds of rejection.

7. Claims (2, 5, 7, 10, 13, 14 and 17) considered allowable subject matter in previous office action are now rejected in view of newly found prior art.

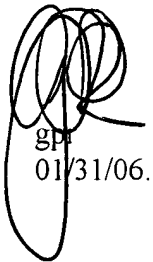
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gpt  
01/31/06.



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